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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

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ART UNIT PAPER NUMBER

3623

DATE MAILED: 02/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/046,226	Applicant(s) SHEN ET AL.	
	Examiner Kalyan K. Deshpande	Art Unit 3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/16/2002</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Introduction

1. The following is a non-final office action in response to the communications received on January 16, 2002. Claims 1-21 are now pending in this application.

Information Disclosure Statement

2. The examiner has reviewed the patents and articles supplied in the Information Disclosure Statements (IDS) provided on January 16, 2002.

Claim Rejections - 35 USC § 112

3. Claims 17-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 17 recites the limitation "the frequency value score" in line 1 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitation "the net revenue contribution score value" in line 1 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 19 recites the limitation "the scores" in line 1 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 101

4. Claims 1, 8, 15, and 16 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claimed invention is required to produce a useful, concrete, and tangible real-world result. An invention that fails to produce a tangible result is one that involves no more than the manipulation of an

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abstract idea. See *State Street Bank & Trust Co. v. Signature Financial Group Inc.*, 149 F. 3d 1368, 47 USPQ2d 1596 (Fed. Cir. 1998). In order to be concrete the result must be substantially repeatable or the process must substantially produce the same result again.

Claims 1, 8, 15, and 16 merely recite the manipulation of an abstract idea and do not produce a concrete result. Claims 1, 8, 15, and 16 recite the steps of "identifying data elements", "identifying data sources", "identifying statistical and analytical packages", and "scoring the frequency value and net revenue contribution value for each customer" which are mere abstract ideas that do not produce real-world results. The steps of "identifying data elements", "identifying data sources", "identifying statistical and analytical packages", and "scoring the frequency value and net revenue contribution value for each customer" are based on subjective standards. The results of these steps will not produce concrete real-world results since there is no evidence that these steps, when repeated, will produce substantially the same results. These steps are based on a subjective standard and will produce different results for each individual performing the steps. Because the results produced by the method are not tangible and concrete, claims 1, 8, 15, and 16 are considered to be directed toward non-statutory subject matter.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aspinall et al. (Aspinall, Edward; Nancarrow, Clive; Stone, Merlin; "The Meaning and Measurement of Customer Retention", *Journal of Targeting, Measurement, and Analysis for Marketing*, February 7th, 2001, pp. 79-87).

As per claim 1, Aspinall teaches:

A method of building a customer retention model comprising the following steps:

identifying data elements (see pp. 79-80 and table 1; where data elements are identified);

identifying data sources (see p. 82; where data sources are identified.);

laying out a data file format (see pp. 82-83; where the data file format is in the form of a questionnaire);

identifying statistical and analytical packages (see pp. 83-86; where different retention properties were identified and analysis of the data to evaluate the analysis against the retention properties was done.); and

applying statistical and analytical packages to data from data sources fulfilling data elements identified in the data file format to perform customer retention (see pp. 83-86; where different retention properties were identified and analysis of the data to evaluate the analysis against the retention properties was done.).

As per claim 2, Aspinall teaches:

The method as claimed in claim 1, wherein the data elements include values for customer information (see pp. 79-81; where various customer information data is used to determine retention results.)

Aspinall fails to teach:

frequent flyer program membership information; passenger flying data; booking channel data; ticketing data; and costs.

Aspinall teaches data elements including customer information (such as frequency of buying, recency of buying, size of expenditure, and Join club (frequent flyer program membership information) information. See p. 80 table 1.). Aspinall does not expressly teach the specific data recited in claim 1; however, these differences are only found in the non-functional descriptive material and are not functionally involved in the steps recited nor do they alter the recited structural elements. The recited method steps would be performed the same regardless of the specific data. Further, the structural elements remain the same regardless of the specific data. Thus, this descriptive material will not distinguish the claimed invention from the prior art in terms of patentability, *see In re Gulack*, 703 F.2d 1381, 1385, 217 USPQ 401, 404 (Fed. Cir. 1983); *In re Lowry*, 32 F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994); MPEP § 2106.

As per claim 3, Aspinall teaches:

The method as claimed in claim 1, wherein the data sources include at least one of an internal data source and an external data source (see pp. 82-85; where internal data is used to determine retention percentages. External data was collected through an external company.).

As per claim 4, Aspinall teaches:

The method as claimed in claim 3, wherein the internal data source includes customer information (see pp. 82-85; where internal data on customers and the company are used.)

Aspinall fails to teach:

customer data; revenue management data; flight scheduling data; sales channel data; and travel agency data.

Aspinall teaches internal data sources and the internal data sources include customer and company information. Aspinall does not expressly teach the specific data recited in claim 1; however, these differences are only found in the non-functional descriptive material and are not functionally involved in the steps recited nor do they alter the recited structural elements. The recited method steps would be performed the same regardless of the specific data. Further, the structural elements remain the same regardless of the specific data. Thus, this descriptive material will not distinguish the claimed invention from the prior art in terms of patentability, *see In re Gulack*, 703 F.2d 1381, 1385, 217 USPQ 401, 404 (Fed. Cir. 1983); *In re Lowry*, 32 F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994); *MPEP* § 2106.

As per claim 5, Aspinall teaches:

The method as claimed in claim 3, wherein the external data source includes at least one of a public data source and a private data source (see pp. 82-85; where the external company gathered data that is both public and private in nature.).

As per claim 6, Aspinall teaches:

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The method as claimed in claim 5, wherein the public data source includes data that is public

Aspinall fails to teach:

Department of Transportation data, Federal Aviation Administration data, Official Airline Guide data, Boeing data, Rolls-Royce data, and NASA data.

Aspinall teaches the collection of public data. Aspinall does not expressly teach the specific data recited in claims 6; however, these differences are only found in the non-functional descriptive material and are not functionally involved in the steps recited nor do they alter the recited structural elements. The recited method steps would be performed the same regardless of the specific data. Further, the structural elements remain the same regardless of the specific data. Thus, this descriptive material will not distinguish the claimed invention from the prior art in terms of patentability, see *In re Gulack*, 703 F.2d 1381, 1385, 217 USPQ 401, 404 (Fed. Cir. 1983); *In re Lowry*, 32 F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994); MPEP § 2106.

As per claim 7, Aspinall teaches:

The method as claimed in claim 5, wherein the private data source includes data that is not held out to the public.

Aspinall fails to teach:

Dun & Bradstreet data, Acxiom data, Experian data, Credit Bureau Data Sources, and American Express data.

Aspinall teaches the collection of private data. Aspinall does not expressly teach the specific data recited in claims 7; however, these differences are only found in the

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non-functional descriptive material and are not functionally involved in the steps recited nor do they alter the recited structural elements. The recited method steps would be performed the same regardless of the specific data. Further, the structural elements remain the same regardless of the specific data. Thus, this descriptive material will not distinguish the claimed invention from the prior art in terms of patentability, *see In re Gulack*, 703 F.2d 1381, 1385, 217 USPQ 401, 404 (Fed. Cir. 1983); *In re Lowry*, 32 F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994); MPEP § 2106.

As per claim 8, Aspinall teaches:

A method of building a customer retention model comprising the following steps:

identifying data elements (see pp. 79-80 and table 1; where data elements are identified);

identifying data sources (see p. 82; where data sources are identified.);

laying out a data file format (see pp. 82-83; where the data file format is in the form of a questionnaire);

identifying statistical and analytical packages (see pp. 83-86; where different retention properties were identified and analysis of the data to evaluate the analysis against the retention properties was done.); and

applying statistical and analytical packages to data from data sources fulfilling data elements identified in the data file format to identify customers for customer retention (see pp. 83-86; where different retention properties were identified and analysis of the data to evaluate the analysis against the retention properties was done.).

As per claim 9, Aspinall teaches:

The method as claimed in claim 8, wherein the data elements include values for customer information (see pp. 79-81; where various customer information data is used to determine retention results.)

Aspinall fails to teach:

frequent flyer program membership information; passenger flying data; booking channel data; ticketing data; and costs.

Claim 8 recites limitations already addressed by the rejection of claim 1; therefore the same rejection applies to this claim.

As per claim 10, Aspinall teaches:

The method as claimed in claim 8, wherein the data sources include at least one of an internal data source and an external data source (see pp. 82-85; where internal data is used to determine retention percentages. External data was collected through an external company.).

As per claim 11, Aspinall teaches:

The method as claimed in claim 9, wherein the internal data source includes customer information (see pp. 82-85; where internal data on customers and the company are used.)

Aspinall fails to teach:

customer data; revenue management data; flight scheduling data; sales channel data; and travel agency data.

Claim 11 recites limitations already addressed by the rejection of claim 4;
therefore the same rejection applies to this claim.

As per claim 12, Aspinall teaches:

The method as claimed in claim 9, wherein the external data source includes at least one of a public data source and a private data source (see pp. 82-85; where the external company gathered data that is both public and private in nature.).

As per claim 13, Aspinall teaches:

The method as claimed in claim 11, wherein the public data source includes data that is public.

Aspinall fails to teach:

Department of Transportation data, Federal Aviation Administration data, Official Airline Guide data, Boeing data, Rolls-Royce data, and NASA data.

Claim 13 recites limitations already addressed by the rejection of claim 6;
therefore the same rejection applies to this claim.

As per claim 14, Aspinall teaches:

The method as claimed in claim 11, wherein the private data source includes data that is not held out to the public.

Aspinall fails to teach:

Dun & Bradstreet data, Acxiom data, Experian data, Credit Bureau Data Sources, and American Express data.

Claim 14 recites limitations already addressed by the rejection of claim 7;
therefore the same rejection applies to this claim.

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As per claim 15, Aspinall teaches:

A method of identifying highly valued customers using a Customer Value Metric Model comprising the following steps:

identifying customer value criteria (see pp. 82-85; where customer value data is collected.);

identifying customer data elements (see pp. 79-80 and table 1; where data elements are identified);

identifying data sources of the data elements (see p. 82; where data sources are identified.);

applying a Customer Value Metric Model to data from the data sources in accordance with the customer value criteria to identify high value customers (see pp. 83-86; where different retention properties were identified and analysis of the data to evaluate the analysis against the retention properties was done.).

Claims 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. (U.S. Patent No. 6925441).

As per claim 16, Jones teaches:

A method of identifying highly valued customers using a Customer Value Metric Model comprising:

determining a frequency value for each customer (see column 13 line 19-45; where the frequency value for each customer is incorporated.);

determining a net revenue contribution value for each customer (see column 13 line 19-45; where the customer transaction history is used. A customer transaction history gives information as to the total net revenue received from a customer.);

scoring the frequency value and net revenue contribution value for each customer (column 14 lines 8-65; where a customer value scoring is done using the customer transaction history. The customer transaction history contains both the frequency value and the revenue contribution value.); and

identifying the highly valued customers by ranking the customers based on the score (column 14 lines 8-65; where a customer value scoring is done using the customer transaction history. The customer transaction history contains both the frequency value and the revenue contribution value. Those customers with high customer value scores can be identified as highly valued customers.).

As per claim 17, Jones teaches:

The method as claimed in claim 4, comprising: ranking the customers based on the frequency value score (see column 13 line 19-45; where the frequency value for each customer is incorporated.).

As per claim 18, Jones teaches:

The method as claimed in claim 4, comprising: ranking the customers based on the net revenue contribution value score (see column 13 line 19-45; where the customer transaction history is used. A customer transaction history gives information as to the total net revenue received from a customer.).

As per claim 19, Jones teaches:

The method as claimed in claim 4, further comprising: sorting the scores based on score pairs including frequency value and net revenue contribution value (column 14 lines 8-65; where a customer value scoring is done using the customer transaction history. The customer transaction history contains both the frequency value and the revenue contribution value.).

As per claim 20, Jones teaches:

The method as claimed in claim 19, further comprising:

sorting matching score pairs based on net revenue contribution value (see column 15 lines 35-61; where the data is sorted based on the net present value. The net present value incorporates the customer value score and the transactional history score. The transactional history score incorporates the revenues generated from the customer.);

ranking the customers based on the assigned numerical value to identify the highly valued customers (column 14 lines 8-65; where a customer value scoring is done using the customer transaction history. The customer transaction history contains both the frequency value and the revenue contribution value. Those customers with high customer value scores can be identified as highly valued customers.).

Jones fails to teach:

dividing the customers into N groups;

assigning a numerical value 1-N to each group; and

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The advantage of dividing customers in to groups is that it gives the system better organization of relevant data. The advantage of assigning a numerical value to each group is that labeling each group facilitates the identification of that group. It would have been obvious, at the time of the invention, for one of ordinary skill in the art to divide customers in to groups and label each group in order to better organize the relevant data and identify the customer groups.

As per claim 21, Jones teaches:

The method as claimed in claim 20, wherein N is 100.

The advantage of creating 100 customer groups is that 100 customer groups is a good sample size to do statistical analysis on. It would have been obvious, at the time of the invention, for one of ordinary skill in the art to create 100 customer groups in order to perform an analysis on a good sample size.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following are pertinent to the current invention, though not relied upon:

Lee (U.S. Patent Publication No. 20020138332) teaches a customer value model in the airline industry.

DeLorme et al. (U.S. Patent No. 5948040) teaches a computerized travel reservation system.

Demarken et al. (U.S. Patent No. 6295521) teaches an airline travel planning system.

Stiles et al. (U.S. Patent No. 6842737) teaches a method and system for providing traveling information.

Flowler et al. (U.S. Patent Publication No. 20020026348) teaches real-time automated marketing systems.

Gardner et al. (U.S. Patent Publication No. 20020178034) a method for reducing the costs and enhancing revenue controls associated with airline travel distribution.

Rouston et al. (U.S. Patent Publication No. 20010037243) teaches a system and method for redeeming frequent flyer miles for use in connection with business travel, and for providing incentives to employees who use frequent flyer miles for business travel. In one embodiment, the system and method are carried out over a computer network, for example the Internet.

Finch et al. (U.S. Patent No. 6944652) teaches a method and system for encouraging employees and employee managers to use the time keeping and expense entry server for entering and approving time entries.

Thomas (Thomas, Jaquelyn S.; "A Methodology for Linking Customer Acquisition to Customer Retention", *Journal of Marketing Research*, May 2001, pp. 262-268) teaches dependencies and interaction of customer acquisition and customer retention.

Murgulets et al. (Murgulets, L.; Eklof, J.; Dukeov, I; Selivanova, I.; "Customer Satisfaction and Retention in Transition Economies", *Total Quality Management*, 2001,

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pp. 1037-1046) teaches major empirical research focusing on customer perceived quality, satisfaction, retention and loyalty measurements.

Zins (Zins, Andreas H.; "Relative Attitudes and Commitment in Customer Loyalty Models: Some Experiences in the Commercial Airline Industry", *International Journal of Service Industry*, 2001, pp. 269-294)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kalyan K. Deshpande whose telephone number is (571) 272-5880. The examiner can normally be reached on M-F 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


kkd


SUSANNA M. DIAZ
PRIMARY EXAMINER

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